

REMARKS

Reconsideration and allowance of the subject application are respectfully solicited.

Claims 1-4, 9, 10, 12 and 13 are pending in this application, with Claims 1 and 12 being independent. Claims 9, 10, 12 and 13 remain withdrawn from consideration. Claim 1 has been amended to define still more clearly what Applicants regard as their invention. Support for the features relating to the thickness of the substrate and the composition of the substrate may be found in the specification at least at page 8, lines 12-16 and 25-28. Applicants respectfully submit that no new matter has been added by the amendments herein.

Claims 1-4 were rejected under 35 U.S.C. § 103(a) as allegedly obvious over Ogawa et al. (U.S. Patent No. 5,576,088) in view of Pope (U.S. Patent No. 4,722,868).

Applicants respectfully request reconsideration of this rejection as applied to the present claims.

Before addressing the merits of the rejection, Applicants believe it will be helpful to review some features and advantages of the claimed invention. Claim 1 relates to a recording medium for ink-jet recording with an ink containing a pigment. The recording medium is provided with an ink-receiving layer on at least one surface of a substrate. The ink-receiving layer comprises a porous layer comprising thermoplastic resin particles that have been mutually fused with no particle structure left, and pigment particles. The ink-receiving layer and the substrate are fused, and the ink receiving layer has gaps formed by the fusion of the thermoplastic resin particles. The amount of the thermoplastic resin in the ink-receiving layer is 40% or less of the amount of the pigment in the ink-receiving layer. The substrate has a thickness in the range

of 0.2 to 1.0 mm, and is composed of at least one selected from the group consisting of a polyvinyl chloride resin, polystyrene resin, polycarbonate resin and polyvinylidene resin.

Thus, the present invention provides a recording medium wherein the adhesion between the ink-receiving layer and the substrate is strong. The ink-receiving layer does not peel off, even when the recording medium is a card. Amended Claim 1 recites a range for the thickness of the substrate. Applicants note that an advantage of this range is that deformation is unlikely to occur when the recording medium is a card.

Claim 1 is also amended to recite the substrate material. These substrate materials are preferable with respect to adhesion to the thermoplastic resin particles in the ink-receiving layer. Since the ink-receiving layer is porous, its ink absorptivity is excellent. Moreover, since the substrate material has a low softening temperature, this causes the substrate and the ink-receiving layer to mutually fuse, and the substrate and the ink-receiving layer adhere to each other strongly.

In Applicants' view, the cited references do not teach or suggest the claimed invention. Ogawa et al. discloses a recording sheet comprising a support having an ink-receiving layer, and a gloss-providing layer provided on the ink-receiving layer, and is said to achieve both ink absorbency and glossiness. Applicants note, however, that Ogawa et al. does not teach or suggest either the problem of peeling off of the ink-receiving layer, or fusion of the substrate.

Applicants state that they have investigated whether or not the support used in the Examples of Ogawa et al. fuses. The support was the paper substrate as used in the Examples described at column 19, lines 37-48. Such paper substrate is subjected to heating in the

production process of the recording sheet when conducting calendar treatment for the gloss-providing layer provided on the ink-receiving layer with a chilled roll having a surface temperature of 50 °C (see Example 1, etc.), and when conducting press-contact with a heated specular roll at 90 °C (see Example 33, etc.). As a result, Applicants found that the paper substrate did not fuse under these conditions.

Pope discloses an inkable sheet comprising a base sheet having on a surface thereof an ink-absorbent polymer resin matrix comprising a vinyl pyrrolidone polymer and an ester of cellulose containing free carboxylic acid groups (col. 2, lines 27-31).

Pope subjects the base sheet to a treatment using a priming medium in order to promote adhesion between the ink-receiving layer and the base sheet (col. 5, lines 41-44). Applicants conclude that this means that since the priming medium is used for improving the adhesion between the ink-receiving layer and the base sheet, Pope does not teach or suggest causing the base sheet to fuse. Applicants submit that since the ink-receiving layer of Pope does not contain thermoplastic resin particles, Pope does not teach or suggest the concept of causing the base sheet and the ink-receiving layer to mutually fuse. Applicants note that all the Examples of Pope use the primer layer, which would not provide a structure such that the base sheet and the ink receiving layer are caused to mutually fuse.

Accordingly, Pope does not teach or suggest that the base sheet and the ink-receiving layer are caused to mutually fuse. Pope does not remedy the deficiencies of Ogawa et al., and the Ogawa et al./Pope combination does not teach or suggest the claimed invention, even assuming that such combination is proper.


For the foregoing reasons, Applicants submit that the present invention, as recited in independent Claim 1, is patentably defined over the cited references, whether taken singly or in combination. The dependent claims should also be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in independent Claim 1. Individual consideration of the dependent claims is requested.

Applicants also respectfully request that this Amendment After Final be entered. This Amendment could not have been presented earlier as it was earnestly believed that the claims on file would be found allowable. Given the Examiner's familiarity with the application, Applicants believe that a full understanding and consideration of this Amendment would not require undue time or effort by the Examiner. No new claims have been added. Moreover, Applicants submit that this Amendment places the application in condition for allowance. Accordingly, entry of this Amendment is believed to be appropriate and such entry is respectfully requested.

Applicants submit that this application is in condition for allowance. Favorable consideration, rejoinder of Claims 9, 10, 12 and 13, withdrawal of the Section 103 rejection set forth in the Office Action, and an early Notice of Allowance are respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,


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